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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,163	09/17/2003	Sandra R. Bulson	POU920030140US1	8450

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EXAMINER	
TANG, KENNETH	

ART UNIT	PAPER NUMBER
2195	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/667,163	BULSON ET AL.	
	Examiner	Art Unit	
	KENNETH TANG	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 March 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14,16-18 and 20-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14,16-18 and 20-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the Amendment on 3/17/08. Applicant's arguments have been fully considered and were found to be persuasive. However, new grounds of rejections have been made that make the arguments moot.

2. The Examiner has acknowledged that the Applicant has cancelled claims 23-47 and 49-50 in the Amendment on 3/17/08.

3. Claims 1-14, 16-18, 20-22 are now presented for examination, wherein claims 1, 18, and 22 are independent claims.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 17 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not described in the Specification nor is it clear to one of ordinary skill in the art what constitutes a virtual machine as being "sanitized". Therefore, one of ordinary skill in the art would not have been enabled to make the invention of claim 17.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "sanitized virtual machine" is indefinite because it is not clear what this term is or how a virtual machine is "sanitized". Therefore, the scope cannot be ascertained and claim 17 is indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 5-8, 17-18, 20, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Walsh (US 4,660,144).

7. As to claim 1, Walsh teaches a method of managing execution of requests of a computing environment, said method comprising:

obtaining by a processor of the computing environment a request to be processed (col. 3, lines 39-51, col. 9, lines 57-68 through col. 10, lines 1-14); and

starting a virtual machine on the processor to process the request, said virtual machine being exclusive to the request (col. 3, lines 39-51, col. 4, lines 52-68); and

processing the request by the virtual machine (col. 3, lines 39-51, col. 4, lines 52-68).

8. As to claim 2, Walsh teaches wherein the starting is managed at least in part by another virtual machine of the processor (base virtual machine managing its adjunct virtual machines) (col. 9, lines 57-65).

9. As to claim 3, Walsh teaches wherein said obtaining comprises receiving the request by another virtual machine of the processor, and wherein the starting comprises starting the virtual machine by the another virtual machine (LOGON is used to construct a adjunct virtual machine from a base virtual machine) (col. 4, lines 52-68, col. 5, lines 1-15).

10. As to claim 5, Walsh teaches wherein the starting comprises providing one or more resources to the virtual machine to process the request (col. 1, lines 12-37, col. 9, lines 57-68).

11. As to claim 6, Walsh teaches further comprising shutting down the virtual machine, in response to completing the request (col. 12, lines 36-65, col. 13, lines 1-17, col. 10, lines 49-54).

12. As to claim 7, Walsh teaches wherein the shutting down comprises returning one or more resources provided to the virtual machine (col. 12, lines 36-65).

13. As to claim 8, Walsh teaches wherein said shutting down (reset or logging off using the end-of-operation, ENDOP) is managed at least in part by another virtual machine of the processor (col. 12, lines 36-65, col. 13, lines 1-17, col. 10, lines 49-54).

14. As to claim 15, Walsh teaches further comprising processing the request by the virtual machine (col. 9, lines 57-68 through col. 10, lines 1-10).

15. As to claim 17, Walsh teaches wherein said virtual machine is a sanitized virtual machine (in the case where a virtual machine or adjunct virtual machine that doesn't have an error, for example) (col. 12, lines 48-65). The Examiner notes that the term "sanitized" has not been described in the claims (nor Specification). The broadest reasonable interpretation of the plain meaning in the claims was taken by the Examiner.

16. As to claim 18, similar to claim 1, Walsh teaches a method of managing initiation of virtual machines of a computing environment, said method comprising:

determining by one virtual machine on a processor of a computing environment that another virtual machine is to be initiated, wherein the determining is in response to receiving by the one virtual machine a request to be processed (col. 3, lines 39-51, col. 9, lines 57-68 through col. 10, lines 1-14);

initiating, by the one virtual machine, the another virtual machine (Fig. 2, col. 4, lines 52-68);

processing the request by the another virtual machine (col. 3, lines 39-51, col. 4, lines 52-68).

17. As to claim 20, Walsh teaches wherein the request is for utilization of machine resources (col. 4, lines 52-68 through col. 5, lines 1-33).

18. As to claim 22, Walsh teaches a method of providing an on-demand (demand by a request) infrastructure, said method comprising:

deploying logic on at least one processor of a computing environment to automatically provide a virtual machine on-demand in response to a request, and to process the request by the virtual machine (col. 3, lines 39-51, col. 9, lines 57-68 through col. 10, lines 1-14).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

19. Claims 4 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable by Walsh (US 4,660,144) in view of Allen et al. (hereinafter Allen) (US 5,175,679).

20. As to claim 4, Walsh is silent in disclosing wherein the receiving the request comprises receiving the request from a job management service coupled to the another virtual machine. However, Allen teaches a virtual machine system having services which balance, manage and provide functions for processing jobs of virtual machines from requests (col. 1, lines 44-68 through col. 2, lines 1-5). Walsh and Allen are in the same field of endeavor of virtual machines. One of ordinary skill in the art would have known to modify the virtual machine system of Walsh such that it include the teachings of Allen's virtual machine system of receiving a request from a job management service coupled to another virtual machine. The suggestion/motivation for doing so would have been to provide monitoring, management, and optimization of the processing of jobs (col. 1, lines 55-68). Therefore, it would have been obvious to one of ordinary skill in the art to combine Walsh and Allen to obtain the invention of claim 4.

21. As to claim 16, it is rejected for the same reason as stated in the rejection of claim 4.

22. Claims 9-10 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable by Walsh (US 4,660,144).

23. As to claim 9, Walsh teaches wherein said shutting down comprises using by the another virtual machine to shut down the virtual machine (col. 12, lines 36-65, col. 13, lines 1-17, col. 10, lines 49-54). Walsh also teaches the virtual machines having services (col. 2, lines 43-47). Walsh is silent in that the service is specifically a communication service. However, one of ordinary skill in the art would have known for Walsh's services to include a communication service that would allow for communication to occur. The suggestion/motivation for doing so would have been to provide the communication that would allow the shutting down of another virtual machine. Without this communication, the virtual machine would not be able to shut down. Therefore, it would have been obvious to one of ordinary skill in the art for Walsh's virtual machine system and services to include a communication service.

24. As to claim 10, it is rejected for the same reasons as stated in the rejection of claim 9. In addition, Walsh teaches a start indication indicating that a virtual machine is to be started (col. 4, lines 61-68).

25. As to claim 21, it is rejected for the same reasons as stated in the rejection of claim 9.

26. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable by Walsh (US 4,660,144) in view of Seino et al. (hereinafter Seino) (US 5,307,495).

27. As to claim 11, Walsh does teach having a multiprocessor system of CPUs (CP0, CP1) and using a processor to process requests (see Fig. 2 and col. 3, lines 5-7). However, Walsh is silent in teaching further comprising: determining which processor of a plurality of processor is available to process the request; and sending the request to the processor determined to be available. Seino teaches a multiprocessing system with virtual machines which determines which processor group or processor (only one processor in the group, etc.) is available to process the request based on identifiers. If available, then signaling among that processor or processors in the group are done (see Abstract, col. 3, lines 5-14). Walsh and Seino are analogous art because they are both in the same field of endeavor of multiprocessing with virtual machines. One of ordinary skill in the art would have known to modify Walsh's multiprocessing virtual machine system such that it includes Seino's teachings of selecting a certain available processor (or groups of processors) to process the request. The suggestion/motivation for doing so would have been to provide the predicted result of having the increased control of selecting desired system operation conditions such that signaling is limited to the processor(s) which need such signaling (col. 3, lines 5-10) and also to improve performance in a computer system (col. 3, lines 11-14). Therefore, it would have been obvious to combine Walsh and Seino to obtain the invention of claim 11.

28. As to claim 12, Walsh teaches wherein said determining comprises obtaining from one or more other virtual machines of one or more processors of the plurality of processors information to be used in the determining (col. 6, lines 15-20).

29. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walsh (US 4,660,144) in view of Seino et al. (hereinafter Seino) (US 5,307,495), and further in view of Johnson (US 6,788,980 B1).

30. Johnson was cited in the previous office action.

31. As to claim 13, Walsh and Seino are both silent in teaching wherein said plurality of processors include at least one processor that is heterogeneous to another processor. However, Johnson teaches a virtual machine environment that includes processors that are heterogeneous (see Abstract, col. 2, lines 15-28, col. 7, lines 48-58). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Walsh in view of Seino's virtual machine environment to include Johnson's feature of heterogeneous processors/devices in a virtual machine environment. The suggestion/motivation for doing so would have been to

allow for communication/harmonization between various types of processors (col. 2, lines 15-55, col. 3, lines 23-25).

32. As to claim 14, it is rejected for the same reasons as stated in the rejection of claim 13.

Response to Arguments

33. Applicant's arguments have been fully considered and were found to be persuasive. However, new grounds of rejections have been made that make the arguments moot.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- **Imada et al. (US 7,272,799 B2)** discloses a virtual machine system and virtual machine control method wherein a virtual machine controls and manages other virtual machines (see Title and Abstract).
- **Onodera (US 5,506,975)** discloses a virtual machine system wherein a virtual machine controls and manages other virtual machines (see Title and Abstract).
- **Bennett et al. (US 2005/0060702 A1)** discloses a virtual machine system wherein a virtual machine is shut down to optimize processor-managed resources (see Title and Abstract).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH TANG whose telephone number is (571)272-3772. The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Meng-Ai An/
Supervisory Patent Examiner, Art Unit 2195

/Kenneth Tang/
Examiner, Art Unit 2195